	1	NEW SQ.	FT.		
AREA DESCRIPTION	EXIST. SQ.F	- T.	NOTES		4L SQ.
MEASUREMENTS ARE FROM OUTSIDE SURFACE OF EXTERIOR WALL. NOTE: ALL NEW CONSTRUCTION					
A) 1ST FLOOR CONDITIONED AREA	2182			2182	
B) 2ND FLOOR CONDITIONED AREA					
D) BASEMENT					
E) ATTACHED COVERED PARKING (GARAGE OR CARPOR	T)				
F) DETACHED COVERED PARKING (GARAGE OR CARPOR	T)	980		980	
G) COVERED WOOD DECKS (COUNTED AT 100%)					
H) COVERED PATIO/PORCH (SEPERATED VALUES:					
I) BALCONY					
J) OTHER-					
TOTAL BUILDING AREA (TBA) (ADD: A. THOUGH J)				<u>A</u>	3162
TOTAL BUILDING COVERAGE (TBC)				B	3162
(FROM TBA SUBTRACT, IF APPLICABLE: B,C,D,I)	)				
K) DRIVEWAY	508			508	
I) SIDEWALKS/LANDINGS	247			247	
M) UNCOVERED PATIO	220			220	
N) UNCOVERED WOOD DECKS (COUNTED AT 50%)					
O) AC PADS AND OTHERS CONCRETE FLATWORK	9			9	
P) OTHER (POOL COPING, RETAINING WALLS)					
TOTAL SITE IMPERVIOUS COVERAGE (ADD: TBC AND K THOUGH P)				<u> </u>	4137
Q) POOL					
SPA					
BUILDING COVERAGE INFORMATION (LDC25-121) LOT AREA (SQ.FT.)					
FINAL BUILDING AREA (SEE ABOVE <u>A</u> . SQ.FT.) 40% MA	λ λτ αρεάλ γ	100- 7	160 /1040	SO_ ZO	1 7 7 97
FINAL COVERAGE % OF LOT (A DIVIDED BY LC FINAL BUILDING COVERAGE (SEE ABOVE <u>B.</u> SQ.FT.) 40% FINAL COVERAGE % OF LOT (B DIVIDED BY LC	MAX )T AREA) X	100 = 3	162/1046	32 = 30 32 = 30	.22%
IMPERVIOUS COVER INFORMATION NOTE: IMPERVIOUS COVER IS THE TOTAL AREA OF COV WALKWAYS, AND DRIVEWAYS. THE TERM EXCLUDES POO GRAVEL PLACED OVER PERVIOUS SURFACES THAT ARE	ÉRED SPAC DLS, FOUNTA USED ONL <sup>V</sup>	ES, PAN Ains, An 7 For L	'ED AREA Id Areas Andscap	kS, 3 WITH 21NG	

FINAL COVERAGE % OF LOT (C DIVIDED BY LOT AREA) X100= 4137/10462 39.54%



HARTFORD RESIDENCE CONSTRUCTION DRAWING NOTES:TYPICAL FOR ALL SHEETS

OR BY PEDESTRIANS. (LDC25–123)

SPECIFICATION NOTES INCLUDE GENERAL INFORMATION ONLY FOR CONSTRUCTION MATERIALS, FINAL MATERIALS VERIFIED IN FIELD BY CONTRACTOR/BUILDER PER

FINAL IMPERVIOUS COVERAGE (SEE ABOVE C SQ.FT.) 45% MAX

REGULATORY REQUIREMENTS. DETAILED ENGINEERING DESIGN FOR CIVIL, MECHANICAL, ELECTRICAL, AND PLUMBING

DESIGNS SHALL BE PROVIDED BY CONTRACTOR AND/OR SUBCONTRACTORS.

ALL WORK SHALL COMPLY WITH LOCAL BUILDING CODE ADOPTED BY AUTHORITY HAVING JURISDICTION. IN ABSENCE THEREOF COMPLY WITH 2015 INTERNATIONAL RESIDENTIAL CODE, WITH LOCAL AMENDMENTS, AND TDLR/TAS 2015 ACCESSIBILITY STANDARD AS APPLICABLE FOR THE PROJECT.

INTERIOR WALLS SHALL BE FRAMED WITH 2X4 STUDS AT 16" D.C. TYPICAL, UNLESS OTHERWISE NOTED, INSTALL DOUBLE STUD BUCKS AT ALL EXTERIOR WALL OPENINGS PER CODE AT FIRST FLOOR, INTERIOR WALLS RECEIVE 5/8 GYPSUM BOARD BOTH SIDES, TYPICAL; AND ALL PLUMBING WET WALLS RECEIVE MOISTURE RESISTANT GYPSUM BOARD BACKUP BEHIND ROOM FINISHES AS SELECTED BY OWNER.

PROVIDE GARAGE SEPARATION PER IRC R302.5 AND R302.6: 1/2" GYPBOARD [TYPE-X] AT CEILING AND WALLS SEPARATION FROM LIVING SPACES; AND MIN. 1&3/8" THICK SOLID CORE DOOR WITH SELF CLOSING DEVICE.

EXTERIOR WALL FRAMED WITH 2X4 AND 2X6 WOOD STUDS SPACED ATOLG, TYPICAL. INSULATE EXTERIOR WALLS WITH R15 OR R19 BATT INSULATION (DEPENDING ON WALL THICKNESS), TYPICAL. EXTEND THERMAL INSULATION VERTICALLY AT ALL EXTERIOR CONDITIONS SO AS TO INSULATE ALL ENCLOSED/CONDITIONED SPACES. INSTALL R38 BATT INSULATION FOR THERMAL INSULATION AT ALL CEILING SPACES ABOVE GARAGE AND EXTERIOR PORCHES BELOW SECOND FLOOR OCCUPIED SPACES AS APPLICABLE, TYPICAL. INSTALL R38 BATT INSULATION AT CEILING AREAS ABOVE SECOND FLOOR OCCUPIED SPACES, TYPICAL.

EXTERIOR WALL FINISHES, MTL. SIDING, AND WOOD SIDING INSTALLED OVER MOISTURE VAPOR BARRIER AND 5/8-INCH STRUCTURAL SHEATHING, TYPICAL.

ALL DOOR AND WINDOW SIZES ARE CALLED OUT ON DRAWINGS. WHERE APPLICABLE TO RENOVATION/REPLACEMENT WINDOWS: PROVIDE EMERGENCY ESCAPE OPENINGS THAT COMPLY WITH IRC R310: 5.7 SQ.FT., SILL HT. MAX. 44" ABOVE FIN. FLOOR. INSTALL SAFETY GLAZING AS APPLICABLE TO DOORS OR WINDOWS PER IRC R308.4.

ALL PLUMBING FIXTURES SHALL COMPLY WITH LOCAL CODE THAT STIPULATES MAXIMUM WATER FLOW RATES, PLUMBING FIXTURE STYLES/TYPES AS SELECTED BY OWNER. ALL NEW ELECTRICAL LIGHT SWITCHES SHALL BE INSTALLED MAX. 48" ABOVE FIN. FLOOR; ALL NEW RECEPTACLES/DUTLETS SHALL BE MOUNTED MIN. 15" ABOVE FIN. FLOOR, COMPLY WITH LOCAL CODE.

ALL EXTERIOR WINDOWS SHALL RECEIVETHERMAL INSULATED GLAZINGS UNITS, TYPICAL.

INSTALL SMOKE AND CARBON MONOXIDE ALARMS PER CODE: IRC R314 AND R315. SMOKE ALARMS: HARD-WIRED, INTERCONNECTED, BATTERY BACKUP, AT EACH SLEEPING ROOM AND IMMEDIATE COMMON AREA OUTSIDE OF SLEEPING ROOMS; AND IF APPLICABLE ON EACH ADDITIONAL STORY INCLUDING BASEMENTS AND HABITABLE ATTICS. CARBON MONOXIDE ALARMS: HARD-WIRED WITH BATTERY BACKUP, INSTALLED DUTSIDE DF EACH SEPARATE SLEEPING AREA IN THE IMMEDIATE VICINITY DF THE BEDROOMS IN DWELLING UNITS WITHIN WHICH FUEL-FIRED APPLIANCE ARE INSTALLED AND/OR HAVE AN ATTACHED GARAGE.

WHERE APPLICABLE FOR A/C EQUIPMENT LOCATED IN ATTICS; PROVIDE EQUIPMENT ACCESS IN CONFORMANCE WITH IRC R807.

SEE ROOF PLAN FOR DOWNSPOUT LOCATIONS TO BE SUPPLIED IN CONFORMANCE TO CODE BY ROOF SUBCONTRACTOR/SUPPLIER.

CONTRACTOR SHALL PROVIDE ROOF VENTILATION AT CEILING AND/OR ATTIC SPACES PER CODE,

ROOF INSULATION DESIGN INTENT: THERMALLY INSULATE ROOFED AREAS WITH MINIMUM R38 BATT INSULATION ABOVE ALL ENCLOSED OCCUPIED SPACES. CONTRACTOR SHALL PROVIDE ENGINEERED FOUNDATION DESIGNS, FLOOR AND ROOF

FRAMING PER CODE. NO TREES ARE BEING REMOVED, NO TREES OVER 19" DIA. ARE IMPACTED BY PROPOSED WORK,

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REAR	
SCALE-	

6:12 SLOPE-Match Main House Comp. Shingle, trim, style, Materials etc...



 $\frac{E E \vee A T I \square N}{-1/2"=1'-0"}$ 





### GENERAL

Building Code: International Residential Code Structural Engineering Design Provisions, 2021 Edition.

The design gravity loads are as follows:

Superimposed Dead Loads (included,	but not limited to):
Mechanical and Ceiling:	10psf
Roof Assemblies:	10psf
Wood Floor Assemblies:	10psf
Finishes:	As required
Live Loads (in accordance with 2015 IF	RC):
Roof:	20psf
Roof Net Uplift:	10psf
Floor:	40psf
Decks:	40psf
Balconies:	60psf
Attics w/ Light Storage:	20psf
Guardrails and Handrails:	200lb Point Load
Guardrails Infill Components:	50psf

- The structure has been designed to withstand the wind pressures specified in ASCE 7-10, using a 3 second gust basic wind speed of 115 miles per hour at a standard height of 14 feet above the ground in exposure B.
- The general contractor is responsible for fitting new work with existing construction. Information on existing buildings shown in the drawings was based upon the information supplied to Gogo Structural Engineers. This information is not as-built data and the actual as-built construction may differ from that represented in the drawings. Contractors shall verify all information. Variations from the dimensions indicated on the contract documents shall be brought to the attention of the architect and/or Gogo Structural Engineers, LLC.
- These drawings do not, nor are intended to, locate property lines, building set backs, nor height limitations. It is the contractor's responsibility to locate the building and construct it to, and within, applicable code restrictions. Further, it is the contractor's responsibility to address site drainage appropriate to the site and in consideration to adjoining properties.
- Methods, procedures, and sequences of construction are the responsibility of the contractor and must satisfy the minimum requirements of the 2015 International Residential Building Code. The contractor shall take all necessary precautions to maintain and insure the integrity of the structure at all stages of construction.
- The general contractor and sub-contractors shall determine the scope of the structural work from the contract documents taken as a whole. The structural drawings shall not be considered separately for purposes of bidding the structural work. Due consideration shall be given to other structural work or work related to the structure, including necessary coordination described or implied by the architectural and mechanical drawings.
- Scales noted on the drawings are for general reference only. No dimensional information shall be obtained by direct scaling of the drawing.
- The general contractor is responsible for coordination of all resulting revisions to the structural system or other trades as a result of acceptance of contractor proposed alternatives or substitutions.
- 10. Structural members have been located and designed to accommodate the mechanical equipment openings specified by the mechanical consultant. Any submissions resulting in revisions to the structure shall be the responsibility of the contractor to coordinate with Gogo Structural Engineers.
- 11. Principal openings in the structure are indicated on the contract documents, refer to the architectural, mechanical, electrical, and plumbing drawings for sleeves, curbs, inserts, etc. not herein indicated. Openings in slabs with a maximum side dimension or diameter of 12 inches or less shall not require additional framing or reinforcement, unless noted otherwise. The location of sleeves or openings in structural members shall be submitted to Gogo Structural Engineers for review.
- FOUNDATION BUILDING PAD
- Due to the absence of a site specific subsurface analysis and report from a registered Geotechnical Engineer, the foundation design is based on assumptions and/or site observations of the existing site conditions. These assumptions may not be verifiable without the expending of additional fees. Foundation conditions noted during construction that differ than those shown in the structural drawings shall be noted to the Structural Engineer before further construction is to proceed.
- Within the foundation outline and 2'-0" beyond, remove all fat clay and/or unstable, completely weathered limestone strata, all organics (I.E., roots, trees, grass, and other humus), any building foundations or rubble, and any other deleterious materials to a minimum depth of 12".
- The floor subgrade shall be properly compacted and proofrolled and shall be free of standing water, mud and frozen soil.
- A vapor barrier with a performance equivalent to a 10 mil stego wrap vapor barrier shall be placed beneath the slab on grade and wrap around perimeter beams.
- In areas where limestone is exposed at the cut surface, remove a depth of limestone to provide for at least 6" of compacted select fill. In areas where soil or completely weathered limestone is exposed, scarify at least six inches of the cut soil subgrade and recompact to at least 95% of the maximum dry density determined using Texas State Department of Highways and Public Transportation (SDHPT) Test Method TEX-113-E conducted with a laboratory compacted effort of 6.63 FT lbs/cu. in. Hold water contents within ± 2%.
- Bring the building pads to grade with select material conforming to the following:

Retained on 2-1/2" screen	0%
Retained on 7/8" screen	5% - 50%
Retained on 3/8" screen	25% - 65%
Retained on 1/4" screen	35% - 75%
Retained on #40 mesh sieve	60% - 90%

Material passing the #40 sieve shall meet the following plasticity requirements:

PASSING No. 40 Sieve	MAXIMUM Plasticity Index	MINIMUM Plasticity Index
25% - 40%	15	3
10% - 25%	20	4

Sandy loam is not acceptable fill material.

- Contractor shall certify the compaction of the select material to at least 95% of the maximum dry density as determined using SDHPT Test Method TEX-113-E conducted with a laboratory compactive effort of 6.63 ft lbs/cu. in. Hold water contents to within + 2% of the optimum, and maintain compacted lift thickness to 6" or less.
- On top of the compacted, select fill or the cut excavation bottom, place a capillary moisture barrier / drainage layer (minimum thickness of four inches) of free draining, clean, crushed stone with sizes ranging mostly between 1/4 and 1/2 inch. A material conforming to ASTM C 33, Grade 67, is suggested since it is readily available in the central Texas area. The purpose of this layer is to:
- A: Provide satisfactory support for slab reinforcement, and
- Break the transmission of capillary moisture to the underside of the slab.
- C) Gogo Structural Engineers, LLC

- 12. On top of the free draining, clean, crushed stone, place a vapor barrier. A reinforced paper product known as Moistop 395, manufactured by the Fo suggested. Placement of the vapor barrier should be in accordance with t recommendations.
- 13. In areas beneath the slab where compacted fill depths exceed 4'-0", all ut conduit, including but not limited to plumbing, gas, and electric conduit li attached to the underside of the concrete floor slab. Means and method responsibility of the contractor and do not fall under the scope of these s
- The foundation design assumptions do allow for a limited amount of pote not affect structural stability. This allowance in design does not cover arch electrical or plumbing features.
- 15. Refer to project specifications for all information concerning foundation c shall perform excavations, footing construction and preparation of the su the project specifications.

CONCRETE

1. Concrete in the following areas shall have the following compressive stren

Spread footings	3000 PSI
Grade beams	3000 PSI
Slabs on grade	3000 PSI
Walls	3000 PSI

- 2. All concrete mix designs shall be reviewed and approved by the testing ag the engineer of record for approval.
- 3. Use the following cementitious materials, of the same type, brand and so Proiect:

Portland Cement: ASTM C 150, Type I/II

- 4. Fly ash may be used as a pozzolan to replace a portion of the portland cer subject to the approval of the structural engineer. Fly ash, when used, sha Type C or F. Concrete mixes using fly ash shall be proportioned to account specific fly ash used and to account for the specific properties of the fly as The ratio of the amount of the fly ash to the total amount of fly ash and c exceed 40 percent.
- 5. Use the following normal-weight aggregates: ASTM C 33, coarse aggregat Provide aggregates from a single source conforming to the following:

Maximum Coarse-Aggregate Size: typically  $\frac{3}{4}$ " nominal diameter Fine Aggregate: free of materials with deleterious reactivity to alkali in a

- 6. Lightweight aggregate shall conform to ASTM C 330.
- 7. Water shall conform to ASTM C 94/C 94M and be potable.
- 8. Admixtures if used shall be subject to the approval of the structural engin
- 9. Mixing, transporting, and placing of concrete shall conform to ACI 301 and
- 10. Conformance to ACI 305.1 "Specification for Hot Weather Concreting" is temperature is above 90 deg F.
- 11. Conformance to ACI 306 "Cold Weather Concreting" is required when a page (3) consecutive days, the average daily air temperature is below 40 deg F not greater than 50 deg F for more than one-half of any 24 hour period.
- 12. The fire protection rating for this project is based upon the use of normal made with carbonate aggregates. Carbonate aggregates consist mainly of carbonate, e.g., limestone or dolomite, and contain 40 percent or less qua
- 13. General contractor shall notify and schedule a pre pour inspection with G minimum of 72 hours prior to placement of concrete.
- 14. During construction, the contractor shall provide temporary shoring of wal supported top and bottom. Such shoring shall not be removed until the su place, the concrete in the walls and supporting elements has attained the compressive strength (fc') and compaction of the backfill against the wall
- 15. A gravity drainage system is required to prevent the build-up of hydrostat
- 16. Detailing of concrete reinforcement bars and accessories shall conform to ACI 315 "Details and Detailing of Concrete Reinforcement" and ACI SP-66 Placing of reinforcing bars shall conform to the recommendations of ACI 3 Engineering" and placing drawings for reinforced concrete structures" and Practice"
- 17. No conduit or piping larger than 1" I.D. shall be run in structural concrete structural drawings.
- 18. All pipe sleeves in concrete members shall be schedule 40 pipe unless sho structural drawings. Location of the sleeves shall be as approved by the St 3 additional stirrups each side of each sleeve in beams and space as direct
- 19. Reinforced steel shall be deformed new billet steel bars in accordance wit A615 Grade 60.
- 20. All stirrups shall be Grade 60 with standard 90 degree hooks.
- 21. Provide 2-#5 x 4'-0" "L" shaped bars top and bottom at all corners and "T"
- 22. All hooks and bends in reinforcing bars shall conform to ACI Standards un
- 23. Reinforcement designated as "continuous" may be spliced using Type "B" splice lengths in beams which are located at the centerline of supports for mid-span for top bars may be 36 bar diameters, unless noted otherwise. for top and bottom bars at discontinuous ends of all grade beams.
- 24. Vertical joints may occur at center of spans at locations reviewed by Gogo
- 25. Horizontal construction joints in concrete pours shall be permitted only w drawings. All construction joints shall be made in the center of spans - see The location of the construction joints shall be as approved by the Archite Engineer. Additional reinforcing at construction joints shall be as specified additional cost to the owner.
- 26. Construction joints between piers and pier caps, footings and walls or col beams, and the floor system they support shall be prepared by roughenin full amplitude of approximately 1/4 inch leaving the contact surface clean
- 27. Reinforcement bars shall not be tack welded, welded, heated, or cut unles documents or reviewed by the structural engineer.

All rights reserved. All designs, drawings, plans & specifications are the property of Gogo Structural Engineers, LLC. Purchaser's rights are conditional & limited to a one-time use to construct a single project on the site & use is limited specifically to such property. The use or reproduction of these plans concerning any other construction is strictly prohibited and plans shall not be sold or transerred to anyone without the written permission of Gogo Structural Engineers, LLC.

material equivalent to a ortifiber Corporation, is he manufacturer's	1t to a28. Welding of reinforcement bars, when accepted by the structural engineer, shall conform to theIn, isAmerican Welding Society Standard D1.4. Electrodes for shop and field welding of reinforcement bars shall conform to ASTM A233, Class E90XX.			
ilities exhaust lines and	29. Minimum concrete cover protection for reinf	orcement bars shall be as follows: (see ACI 318 Section		
nes, shall be adequately of attachment shall be the	Concrete exposed to weather		6	
structural documents.	#5 bars and smaller	1 - 1/2 inches 2 inches	0.	
ential vertical rise that will hitectural mechanical	Concrete cast against earth	3 inches	7. 8	
meetural, meenameal,	Grade beams:	1 - 1/2 inches	0.	
construction. The contractor	Board formed sides	2 inches	1.	
lograde in accordance with	Bottom	3 inches 3 inches	2. 3.	
	Slabs on grade:		4.	
ngth (f'c) at 28 days:	Single layer or top layer Bottom layer cast against soil Bottom layer not cast against soil	2 inches 3 inches 2 inches	5. 6.	
	Columns	1 - 1/2 inches	7.	
	Slabs on metal forms	3/4 inches (top)	8. 9.	
gency prior to sending to	Walls below grade (backfilled side) Walls below grade (no backfill)	2 inches 3/4 inches	10 11	
urce throughout the	30. Horizontal wall steel shall be continuous with corners.	90 degree bends and 12" returns along each wall at	12 13	
	31. Concrete pours shall not exceed 5000 square	feet or 100 linear feet on any side.	14	
mont in a concrete mix	POST-INSTALLED ANCHORS		15 16	
all conform to ASTM C618,	1. Post-installed anchors shall only be used whe	re specified on the drawings.	17 18	
sh concrete thus resulting. ement in the mix shall not	<ol> <li>Contractor shall obtain approval from Engine missing or misplaced cast-in-place anchors.</li> </ol>	er of Record prior to using post-installed anchors for	19 20 21	
	3. Care shall be given to avoid conflicts with exis	sting rebar. Holes shall be drilled and cleaned per the	22	
të or better, graded.	manufacturer's instructions. Anchors shall be instructions at not less than minimum edge d manufacturer's literature.	installed per the manufacturer's installation istances and/or spacings indicated in the	23 24	
cement	4. Unless specified otherwise, anchors shall be	embedded in the appropriate substrate with a minimum	25	
	embedment of 8 times the nominal anchor di intended load.	ameter or the embedment required to support the	26	
ooor	<ol><li>Contractor to notify engineer prior to installa below.</li></ol>	tion for anchor product approval chosen from list	27	
	6. Substitution requests, for products other that	n those specified, shall be submitted to the Engineer	29	
required when air	with calculations that are prepared & sealed substituted product will achieve an equivalen required by the Building Code.	by a registered Professional Engineer showing that the it capacity using the appropriate design procedure		
eriod for more than three	7. Contact Simpson Strong-Tie at (800) 999-509	9 or HILTI at (800) 879-6000 X7980 for product related	30	
and the air temperature is	questions and availability.		31	
weight aggregate concrete	8. Acceptable products for installation in concre	te are as follows:	32	
f calcium or magnesium artz, chert and flint.	<ul> <li>A. Expansion anchors shall be:</li> <li>Simpson Strong-Tie "Strong-Bolt" per ICC E</li> <li>Simpson Strong-Tie "Strong-Bolt 2" per ICC</li> </ul>	SR-1771 ESR-3037		
iogo Structural Engineers a	<ul> <li>HILLI KWIK BOIL 12 PELICC ESK-1917</li> <li>B. Scrow anchors shall be.</li> </ul>		33	
alls which are ultimately	Simpson Strong-Tie "Titen HD" per ICC ESR	-2713		
upporting elements are in	C Adhesive anchors shall be:			
has been completed.	Simpson Strong-Tie "SET-XP Epoxy-Tie Adh	esive" per ICC ESR-2508		
tic pressure behind the	- HILTI "HY 200 Adhesive" per ICC ESR-3013	34-2322		
the recommendations of	D. Powder Actuated Fasteners shall be:			
"Detailing Manual".	- HILTI "X-U Powder-Driven Fasteners" per IC	C ESR-2269	9.	
d CRSI "Manual of Standard	9. Acceptable products for installation in grout	filled concrete block are as follows:		
mombars unloss shown on	A. Expansion anchors shall be:	D 4300	10	
own otherwise on the	<ul> <li>Simpson strong-ne wedge-Air pericces</li> <li>HILTI "Kwik Bolt 3" per ICC ESR-1385</li> <li>B. Screw anshors shall be:</li> </ul>	K-1390		
tructural Engineer. Provide	- Simpson Strong-Tie "Titen HD" per ICC ESR-	-1056		
th A.S.T.M. Specification	C. Adhesive anchors shall be: - Simpson Strong-Tie "SET Epoxy-Tie Adhesive - HILTL "HIT-HY150 Adhesive Anchoring Syste	e" per ICC ESR-1772 em" per ICC ESR-5193	11	
	10. Acceptable products for installation in the so	ffit of concrete over profile metal deck are as follows:	12	
" intersections of beams.	A. Expansion anchors shall be:		IΑ	
lless shown otherwise.	<ul> <li>Simpson Strong-Tie "Strong-Bolt" per ICC E</li> <li>HILTI "Kwik Bolt TZ" per ICC ESR-1917</li> </ul>	SR-1771	<u> </u>	
splices. Reinforcement bar	- Simpson Strong-Tie "Strong-Bolt 2" per ICC	ESR-3037		
r bottom bars and at Provide standard ACI hooks	<ul> <li>B. Screw anchors shall be:</li> <li>Simpson Strong-Tie "Titen HD" per ICC ESR-</li> </ul>	-2713		
	TIMBER			
o Structural Engineers.	<ol> <li>Unless otherwise noted, all structural framing</li> </ol>	g lumber shall be clearly marked No. 2 Southern Pine by	2.	
where indicated on the educated on the educate	the SPIB.	,		
ect and the Structural d by the Engineer without	2. All wood studs shall be full height without int	ermediate plate line unless detailed otherwise.		
	<ol> <li>Solid 2x blocking shall be provided at end and between supports in rows not exceeding 8'-0</li> </ol>	l point of support of all wood joists and shall be placed " apart. All walls shall have 2x solid blocking at 4'-0" o c		
umns, or walls, columns,	maximum vertically for plate heights exceeding a long of the second seco	ng 8'-0". End nail with 2-16d nails or side toe nail with	3.	
and free of laitance.	4. Decking: All nlywood decking shall be ADA Pa	ted Sheathing. Exposure 1 $\frac{3}{4}$ " T&G for floors with $\frac{48}{4}$ .	л	
ss indicated on the contract	s indicated on the contract Span Rating, $\frac{5}{3}$ " with clips for roofs with $\frac{4}{2}_0$ Span Rating, use 10d common nails at 6" o.c. at all supported edges, 10d at 12" o.c. at all intermediate supports (1 $\frac{5}{3}$ " min. penetration). All joints in plywood decking shall be staggered.			

- (UNLESS NOTED OTHERWISE IN THE SHEARWALL SCHEDULE AND LATERAL BRACING PLAN) Place a single plate at the bottom and a double plate at the top of all stud walls. Connection Joist to sill or Girder - toenail ..
- Bridging to joist -toenail each end... Sole plate to joist or blocking - typ. face nail...
- Top plate to stud endnail/endnail..
- Stud to sole plate toenail... Double studs - face nail ..
- Double top plates typical face nail...
- Blocking between joists and/or rafters toenail to dbl top plate .....
- Blocking between cantilevered joists toenail to dbl top plate ... Rafters to top plate w/ overhang < 2'-0" - toenail......(3) - 8d
- Rafters to top plate w/ overhang  $\geq 2'-0"$  but < 3'-6".....
- Rim joist to top plate toenail..
- Top plates (laps and intersections) face nail... Continuous header (two pieces).
- Ceiling joists to plate toenail.. Continuous header to stud - toenail...
- Ceiling joists (laps over partitions) face nail.
- Ceiling joists to parallel rafters face nail...
- Rafter to plate toenail ..
- 1" diagonal brace to each stud and plate face nail......(2) 8d Built-up corner studs....
- Built-up girder and beams face nail at top & bottom

  - face nail at ends and at each splice....
- 2" planks at each bearing...
- Collar tie to rafter face nail.
- Jack rafter to hip toenail...
- Roof rafter to 2x ridge beam toenail.
- Joist to band joist face nail.... Ledger strip - face nail...
- Plywood
- Floor, wall and roof sheathing (to framing): <sup>3</sup>/<sub>4</sub>" and less...  $\frac{1}{2}$ ",  $\frac{5}{8}$ " and  $\frac{3}{4}$ ".
- $1-\frac{1}{8}$ " and  $1-\frac{1}{4}$ ".
- 12" o.c. at intermediate supports.
- Panel siding (to framing):  $\frac{1}{7}$ " or less...
- \*Corrosion-resistant siding or casing nails
- Built-up columns (unless detailed otherwise):
- COLUMN TYPE FASTENERS
- ....1 row of 10d nails each side @ 8" o.c. staggered 3 - 2x4... ....1 row of 30d nails each side @ 8" o.c. staggered
- 2 2x6. ..2 rows of 10d nails each side @ 8" o.c. ....2 rows of 30d nails each side @ 8" o.c. 3 - 2x6...
- o.c. or with an approved alternative.
- otherwise.
- SAE J 429 Grade 1. Bolts shall be installed per AMSI/ASME Standard B18.2.1.

### MINATED VENEER LUMBER (LVL)

- following allowable design values:

  - 1,900,000 psi in modulus of elasticity
- Multiple plies shall be attached together with a minimum of:
- 2 rows of 10d common nails @ 12" o.c., 2" from top and bottom.
- specifications for side-loaded beams or contact engineer.
- spaced a minimum of 2x diameter of the largest hole.

- 2 2X4...
- 4 2x4..
- ......2 rows of  $\frac{3}{8}$ " dia. through bolts @ 8" o.c. 4 - 2x6.....
- alternative.

- - 2600 psi in bending
  - 285 psi in horizontal shear

- and bottom.



### COORDINATION

- 1. All coordination efforts, scheduling, or structural clarification of plan from general contractors, sub contractors, architects, and owners or any persons shall first email engineer of record with sufficient detail about the subject at victor@gogo-llc.com. If applicaple, send redlined structural plans or architect plans so engineer can begin reviewing and come up with a solution.
- 2. Only certain of the required sleeve openings in structural framing component members, and only certain of the required framed openings in and/or through structural assembly are indicated on the structural series drawings. However, all sleeves, inserts and openings, including frames and/or sleeves, therefore, shall be provided for passage, provision and/or incorporation of the work of the contract, including but not limited to Mechanical, Electrical, and Plumbing work. The providing for sleeves or framed openings shall include the verification of sizes, alignment, dimension, position, locations, elevations, and grades as required to serve the intended purpose. Openings not indicated on the structural series drawings, but required as above, shall have been approved by the engineer.
- 3. Refer to Architectural, Mechanical, Electrical, and Plumbing series drawings for floor elevations, slopes, drains, and location of depressed and elevated floor areas.
- 4. Structural series drawings shall be compared with drawings of other series; differences shall be referred to the Architect for instruction.
- 5. Compatibility of accommodation and provision for building equipment supported on or from structural components shall be verified as to size, dimension, clearances, accessibility, weights, and reaction with the equipment for which the accommodation has been designed prior to submission of shop drawings and submittal data for each equipment and for structural components; differences shall be referred to the Architect for review and approval and notation.
- 6. The structural system of this building is designed to perform as a completed unit. Prior to completion of the structure, structural components may be unstable and it is the responsibility of the contractor, or the client in the absence of a general contractor, to provide temporary shoring and/or bracing as required for the stability of the incomplete structure and for the safety of all on-site personnel.
- 7. The remodeling and/or rehabilitation of an existing building requires that certain assumptions be made regarding existing conditions, and because some of these assumptions may not be verifiable without expending additional sums of money or destroying an otherwise adequate or serviceable portion of the structure. The client agrees to the fullest extent permitted by law, to indemnify and hold the Design Professional harmless from any claim, liability, or cost (including reasonable attorneys' fees and cost of defense) for injury or economic loss arising or allegedly arising out of the professional services provided under this agreement, excepting only those damages, liabilities for costs the attributable to the negligence or willful misconduct of the Design Professional.





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FRAMING PLAN NOTES

- 1. ALL ROOF RAFTERS SHALL BE 2X6 SPACED @ 24" O.C. W/ A MAXIMUM UNSUPPORTED HORIZONTAL SPAN OF 11'-0" OR 2X8 @ 24" O.C. WITH A MAXIMUM SPAN OF 14'-0", U.N.O. ON PLAN.
- 2. RIDGE MEMBERS SHALL BE 2X8 OR 2X10 WITH A MAXIMUM UNSUPPORTED HORIZONTAL SPAN OF 4'-0" U.N.O. ON PLAN.
- ALL LOAD BEARING WALLS SHALL BE 2X4 STUDS @ 16" O.C. FOR EXTERIOR WALLS AND 2X4 STUDS @ 16" O.C. FOR INTERIOR WALLS AND ARE INDICATED AS: \_\_\_\_\_
- 4. ALL WALLS SHOWN ARE FROM FLOOR BELOW.
- 5. IN THE ABSENCE OF CEILING FRAMING AND/OR VAULTED CEILINGS, ALL WALLS INCLUDING GABLE END WALLS SHALL BE FRAMED FULL HEIGHT WITH NO INTERMEDIATE PLATES.
- 6. CEILING JOISTS SHALL MEET OR EXCEED THE FOLLOWING CRITERIA:

JOIST SIZE	SPACING	MAXIMUM SPAN
2X6	24" O.C.	11'-0"
2X8	24" O.C.	14'-2"
2X10	24" O.C.	16'-11"
*DOUBLE ALI	L CEILING JOISTS SUPP	ORTING ROOF RIDGE LOADS

- 7. ALL HEADERS SHALL BE FULLY SUPPORTED BY 2-STUD COLUMNS, U.N.O. ON PLAN. HEADERS MARKED (TYP. HDR) SHALL BE (3) 2X6 MIN. @ 2X6 STUD WALLS & (2) 2X8 MIN. @ 2X4 STUD WALLS.
- 8. ALL JOIST HANGERS ARE INDICATED AS \_\_\_\_\_ AND SHALL BE THE FOLLOWING BY SIMPSON STRONGTIE\*: - 2X10..... .. LUS210
- 2X FLOOR TRUSS..... PER TRUSS MANUFACTURER'S SPEC.
- (2) 2X12..... LUS210-2
- (2) 1 ¾" X11 ⅛" LVL...... IUS3.56/11.88 \*ALL HANGERS SHALL BE INSTALLED TO MANUFACTURER'S SPECIFICATIONS
- 9. SEE SHEET S0.0 FOR ADDITIONAL NOTES.







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### 1. ALL ROOF RAFTERS SHALL BE 2X6 SPACED @ 24" O.C. W/ A MAXIMUM UNSUPPORTED HORIZONTAL SPAN OF 11'-0" OR 2X8 @ 24" O.C. WITH A MAXIMUM SPAN OF 14'-0", U.N.O. ON PLAN. 2. RIDGE MEMBERS SHALL BE 2X8 OR 2X10 WITH A MAXIMUM UNSUPPORTED HORIZONTAL SPAN OF 4'-0" U.N.O. ON PLAN. 3. ALL LOAD BEARING WALLS SHALL BE 2X4 STUDS @ 16" O.C. FOR EXTERIOR WALLS AND 2X4 STUDS @ 16" O.C. FOR INTERIOR WALLS AND ARE INDICATED AS: \_\_\_\_\_ 4. ALL WALLS SHOWN ARE FROM FLOOR BELOW. 5. IN THE ABSENCE OF CEILING FRAMING AND/OR VAULTED CEILINGS, ALL WALLS INCLUDING GABLE END WALLS SHALL BE FRAMED FULL HEIGHT WITH NO INTERMEDIATE PLATES. 6. CEILING JOISTS SHALL MEET OR EXCEED THE FOLLOWING CRITERIA: JOIST SIZE SPACING MAXIMUM SPAN 24" O.C. 2X6 11'-0" 24" O.C. 14'-2" 2X8 24" O.C. 16'-11" 2X10 \*DOUBLE ALL CEILING JOISTS SUPPORTING ROOF RIDGE LOADS 7. ALL HEADERS SHALL BE FULLY SUPPORTED BY 2-STUD COLUMNS, U.N.O. ON PLAN. HEADERS MARKED (TYP. HDR) SHALL BE (3) 2X6 MIN. @ 2X6 STUD WALLS & (2) 2X8 MIN. @ 2X4 STUD WALLS. 8. ALL JOIST HANGERS ARE INDICATED AS \_\_\_\_\_ AND SHALL BE THE FOLLOWING BY SIMPSON STRONGTIE\*: - 2X10..... ... LUS210 - 2X FLOOR TRUSS..... PER TRUSS MANUFACTURER'S SPEC. - (2) 2X12..... LUS210-2 - (2) 1 <sup>3</sup>/<sub>4</sub>" X11 <sup>7</sup>/<sub>8</sub>" LVL..... IUS3.56/11.88 \*ALL HANGERS SHALL BE INSTALLED TO MANUFACTURER'S SPECIFICATIONS 9. SEE SHEET S0.0 FOR ADDITIONAL NOTES.

FRAMING PLAN NOTES





1 / 4" = 1' - 0" FOR 22" X 34" (REDUCE BY 50% FOR 11" X 17")



FRAMING PLAN NOTES





BRACE LINE 3 SEE SHEAR WALL SCHEDULE

ANCHORAGE PLAN NOTES

# LATERAL BRACING PLAN NOTES

3. SEE FRAMING PLANS FOR ADDITIONAL INFORMATION.

- FOR EXAMPLE, INDICATES REQUIRED HOLDOWN AT ENDS OF LATERAL BRACES. SEE TYPICAL HOLDOWN DETAIL FOR 1. ANCHOR BOLT AND FASTENING REQUIREMENTS.
- 2. SEE SHEET S3.0 FOR TYPICAL HOLDDOWN DETAIL.
- 3. SEE SHEET S0.0 FOR ADDITIONAL NOTES.
- 4. SEE LATERAL BRACING PLANS FOR ADDITIONAL INFORMATION.

SHEAR WALL SCHEDULE

REQUIREMENTS.

<u>E 4</u>	L SW SHEATHING		FASTENER AT PANEL EDGES	FASTENER AT PANEL INTERIOR	ANCHOR BOLTS*	SILL ANCHORS	A35 CLIP SPACING
JLE	$\langle 1 \rangle$	<sup>15</sup> <sub>32</sub> " SHEATHING (ONE SIDE, BLOCKED)	8d @ 6" O.C.	8d @ 12" O.C.	%" Ø @ 48" O.C.	16d @ 4" O.C.	16" O.C.
	2	<sup>15</sup> <sub>32</sub> " SHEATHING (ONE SIDE, BLOCKED)	8d @ 4" O.C.	8d @ 12" O.C.	%" Ø @ 40" O.C.	SIMPSON SDS ¼" Ø X 6" @ 6" O.C.	10" O.C.

# BRACE LINE SEE SHEAR WAI

SCHEDU

# (XX'-XX'')

(X'-X") INDICATES SHEAR WALL TYPE AND MINIMUM LENGTH. SEE SHEAR WALL SCHEDULE THIS SHEET FOR SHEATHING TYPE AND FASTENING SHEATHING AND FASTENING REQUIREMENTS MAY NOT BE SUBSTITUTED WITH ANOTHER SYSTEM WITHOUT PRIOR APPROVAL OF GOGO STRUCTURAL ENGINEERS LLC

A35 CLIP SPACING	ASD WIND SHEAR WALL CAPACITY	HOLDOWN ANCHOR	
16" O.C.	392 PLF	SEE PLAN	
10" O.C.	602 PLF	SEE PLAN	

![](_page_9_Picture_19.jpeg)

![](_page_10_Figure_0.jpeg)

3 / 4" = 1' - 0"

'LDH' TENSION DEVELOPMENT LENGTH (EMBEDMENT LENGTH) FOR STANDARD END HOOKS (GRADE 60 UNCOATED BARS) NORMAL WEIGHT CONCRETE								
LDH     2" MIN. COVER ON EXPOSED SURFACES INCREASE Idh DIMENSION IF NECESSARY (*)       STANDARD 90° HOOK SIDE COVER ≥ 2 1/2"     STANDARD 180° HOOK SIDE COVER ≥ 2 1/2"								
BAR	f'c=3000 PSI	f'c=4000 PSI	f'c=5000 PSI	f'c=6000 PSI	f'c=8000 PSI			
SIZE	LDH	LDH	LDH	LDH	LDH			
#3	6"	6"	6"	6"	6"			
#4	8"	7"	6"*	6"*	6"*			
#5	10"	9"	8"	7"	6"*			
#6	12"	10"	9"	8"	7"*			
<i>#</i> 7 14" 12" 11" 10" 9"								
#8 16" 14" 12" 11" 10"								

14"

15"

17"

13"

14"

16"

11"

12"\*

14"\*

				NORM	AL WEIGHT CO	NCRETE				
BAR SIZE	f'c = 3000 PSI		f'c = 4000 PSI		f'c = 5000 PSI		f'c = 6000 PSI		f'c = 8000 PSI	
	ТОР	BOTTOM	ТОР	воттом	ТОР	воттом	ТОР	воттом	ТОР	BOTTOM
#3	28"	22"	24"	19"	22"	17"	20"	16"	17"	16"
#4	37"	29"	32"	25"	29"	22"	26"	20"	23"	18"
#5	47"	36"	40"	31"	36"	28"	33"	25"	29"	22"
#6	56"	43"	48"	37"	43"	33"	40"	31"	34"	26"
#7	81"	63"	70"	54"	63"	49"	58"	44"	50"	38"
#8	93"	72"	80"	62"	72"	55"	66"	51"	57"	44"
#9	105"	81"	91"	70"	81"	63"	74"	57"	64"	49"
#10	118"	91"	102"	79"	91"	70"	83"	64"	72"	56"
#11	131"	101"	113"	87"	101"	78"	93"	71"	80"	62"

## NOTES:

3 / 4" = 1' - 0"

- 1. THAN 'db'. WHERE db IS THE NOMINAL DIAMETER OF THE BAR.
- 2. DEVELOPMENT LENGTH.
- 3. FOR LIGHT WEIGHT CONCRETE, MULTIPLY THE TABULATED VALUES BY 1.3.
- DIVIDED BY 60 KSI.

#9

#10

#11

WHEN EITHER SIDE OR END COVER IS SMALLER THAN 2 ½", MULTIPLY "LDH" BY 1.4.

15"

17"

19"

18"

20"

22"

END CONCRETE COVER (90° HOOKS)  $\geq$  2". \* FOR 180° HOOKS AT RIGHT ANGLES TO EXPOSED SURFACES, 2" MINIMUM COVER TO TAIL SHALL BE PROVIDED.

ינ 	DC' COMPRESSIC AND COMP (GRADE NORM	ON DEVELOPMEN RESSION LAP SPL 60 UNCOATED BARS) MAL WEIGHT CONCRETE	NT LENGTH ICES				
BAR	f'c ≥ 3000 PSI	MINIMUM LAP SPLICE					
SIZE	LDC	STANDARD LAP	WITH COLUMN SPIRALS				
#3	9"	12"	12"				
#4	11"	15"	12"				
#5	14"	19"	14"				
#6	17"	23"	17"				
#7	20"	26"	20"				
#8	22"	30"	23"				
#9	25"	34"	25"				
#10	28"	38"	29"				
#11	31"	42"	32"				

# NOTES

 $\frac{1}{1}$ . STANDARD LAP SPLICE LENGTH FOR COMPRESSION BARS = 30 BAR DIAMETERS,

BUT NOT LESS THAN 12". 2. WHEN BARS OF DIFFERENT SIZE ARE LAP SPLICED, SPLICE LENGTH SHALL BE THE

LARGER OF LDC. 3. SPIRALS SHALL CONFORM TO ACI 7.10.4 & 10.9.3.

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![](_page_10_Figure_20.jpeg)

![](_page_10_Picture_22.jpeg)

![](_page_10_Picture_23.jpeg)

TABULATED VALUES ARE APPLICABLE ONLY IF CLEAR SPACING OF BARS BEING DEVELOPED OR SPLICED IS NOT LESS THAN 'db', CLEAR COVER IS NOT LESS THAN 'db', AND STIRRUPS OR TIES THROUGHOUT 'ld' IS NOT LESS THAN CODE MINIMUM OR CLEAR SPACING OF BARS BEING DEVELOPED OR SPLICED IS NOT LESS THAN 2X 'db' AND CLEAR COVER IS NOT LESS

'TOP' BARS ARE HORIZONTAL REBAR WITH MORE THAN 12" OF FRESH CONCRETE CAST BELOW THE BARS AT THE END

4. FOR EPOXY COATED BARS, MULTIPLY TABULATED VALUES BY THE RATIO OF THE REINFORCEMENT YIELD STRENGTH

5. FOR CLASS "A" SPLICE USE VALUE AS NOTED IN THE TENSION DEVELOPMENT LENGTH TABLE.

			'LD'	<b>TENSION D</b>	EVELOP	MENT LENG	STH			
				(GRADE	60 UNCOA	TED BARS) DNCRETE				
BAR	f'c = 3000 PSI		f'c = 4000 PSI		f'c = 5000 PSI		f'c = 6000 PSI		f'c = 8000 PSI	
SIZE	LD TOP	LD BOTTOM	LD TOP	LD BOTTOM	LD TOP	LD BOTTOM	LD TOP	LD BOTTOM	LD TOP	LD BOTTOM
#3	22"	17"	19"	15"	17"	13"	15"	12"	13"	12"
#4	29"	22"	25"	19"	22"	17"	20"	16"	18"	14"
#5	36"	28"	31"	24"	28"	22"	25"	20"	22"	17"
#6	43"	33"	37"	29"	33"	26"	31"	24"	26"	20"
#7	63"	48"	54"	42"	49"	37"	44"	34"	38"	30"
#8	72"	55"	62"	48"	55"	43"	51"	39"	44"	34"
#9	81"	62"	70"	54"	63"	48"	57"	44"	49"	38"
#10	91"	70"	79"	61"	70"	54"	64"	49"	56"	43"
#11	101"	78"	87"	67"	78"	60"	71"	55"	62"	48"

# NOTES:

1. TABULATED VALUES ARE APPLICABLE ONLY IF CLEAR COVER OF BARS BEING DEVELOPED OR SPLICED IS NOT LESS THAN 'db', AND STIRRUPS OR TIES THROUGHOUT 'LD' IS NOT LESS THAN CODE MINIMUM, OR CLEAR SPACING OF BARS BEING DEVELOPED OR SPLICED IS NOT LESS THAN 2X 'db' AND CLEAR COVER IS NOT LESS THAN 'db'. WHERE db IS THE NOMINAL DIAMETER OF THE BAR.

'TOP' BARS ARE HORIZONTAL REBAR WITH MORE THAN 12" OF FRESH CONCRETE CAST BELOW THE BARS AT THE DEVELOPMENT LENGTH. FOR LIGHT WEIGHT CONCRETE, MULTIPLY TABULATED VALUES BY 1.3.

4. FOR EPOXY COATED BARS, MULTIPLY TABULATED VALUES BY 1.5 FOR BOTTOM BARS, AND BY 1.3 FOR TOP BARS. 5. FOR REINFORCEMENT OTHER THAN GRADE 60, MODIFY THE TABULATED VALUES BY THE RATIO OF THE REINFORCEMENT YIELD STRENGTH DIVIDED BY 60 KSI.

![](_page_10_Figure_34.jpeg)

(4) STIRRUP BAR BENDING DETAIL ALTERNATIVES

![](_page_10_Picture_38.jpeg)

![](_page_11_Figure_0.jpeg)

![](_page_11_Picture_2.jpeg)

![](_page_12_Figure_0.jpeg)

![](_page_12_Figure_2.jpeg)

![](_page_12_Figure_3.jpeg)

	7				
GOGO STRUCTURAL ENGINEERS, LLC					
PO BOX 91102 AUSTIN,TX 78709 PHONE 512 777 1733					
XIGTOR MMENA * 7 XIGTOR MMENA 97. (CENSED ONL) SJONAL ENO					
PERMIT SET					
NEW RESIDENTIAL 2500 HARTFORD RD AUSTIN, TEXAS					
FIRM NO. 17948					
DRAWN BY: RJR					
CONTACT: VHM					
DATE: 10.16.2021					
JOB #: 21.066					
TYP FRAMING DETIALS					
S4.0					

![](_page_13_Figure_0.jpeg)

GOGO STRUCTURAL ENGINEERS, LLC	
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NEW RESIDENTIAL 2500 HARTFORD RD AUSTIN, TEXAS	
FIRM NO. 17948	
CONTACT: VHM	
DATE: 10.16.2021	
JOB #: 21.066	
REVISION DATE	
TYP.FRAMING DETIALS	
S4.1	

SHEATHING

2X STUD WALL